

SAA09G505-003
REV. 9
B/L: 72.60
SYS: ECS/SLF/SL5

AUG 11 1988

Critical Item: Check Valve

Find Number: A108013

Criticality Category: 1S

SAA No: 09G505-003

System/Area: ECS/SLF/SL5

NASA

PMN/ 570-0534/

Part No: N/A

Name: Portable Purge Unit

Mfg/ Dunham Bush/

Drawing/

Part No: NPK

Sheet No: 79X06061/1

Function: Prevents backflow of liquid/gaseous R-12 from compressor. *(refrigerant)*

Critical Failure Mode: Fails closed. FM No. 09G505-003.008

Failure Cause: Contamination.

Failure Effect: Loss of ability to cool compressor. Compressor overheats and shuts down. Blower/compressor interlock stops blower. Loss of air flow results in loss of purge to Orbiter compartments. Loss of ability to monitor purge air for leaks. Possible loss of life or vehicle during a hazardous condition such as leakage of hazardous fluids or gases.

Acceptance Rationale

Design:

- o Nominal operating pressure 150±10 psig - designed for 180 psig.
- o Commercially available component; used throughout industry.
- o Unit operating media is R-12 and a closed system. Also, a dryer/filter is provided to prevent moisture/contamination from entering the check valve.

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Check Valve A108C13 (Continued)

Test:

- o The OMRSD, File VI will require the valves to be tested to meet 150±10 psig operating criteria, 150 psi max. reverse seat leakage, and 160 psig max fwd. cracking pressure at component replacement.
- o The OMRSD, File VI will require that operation of the purge unit is verified prior to each use.
- o The purge unit is powered up and verified operational approximately three hours prior to Orbiter landing per OMI S0028 and S0026.

Inspection:

- o There is no inspection available that would not require the refrigerant system to be open to the atmosphere.

Failure History:

- o No BRACA failure history identified.
- o No GIDEP failure history identified.

Operational Use:

- o There is nothing that can be done immediately to mitigate the effect of the failure.
- o The purge unit is monitored for any indication of part malfunction. If any anomalies are observed, appropriate steps are taken to repair or replace the item.

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